



Center for  
**Rural Strategies**



June 19, 2017

The Honorable Ajit Pai, Chairman  
The Honorable Mignon Clyburn, Commissioner  
The Honorable Michael O’Rielly, Commissioner  
Federal Communications Commission  
445 12<sup>th</sup> Street, SW  
Washington, DC 20554

*Re: Amendment of the Commission’s Rules with Regard to Commercial Operations in the  
3550-3650 MHz Band, GN Docket No. 12-354*

Dear Chairman Pai, Commissioner Clyburn and Commissioner O’Rielly:

More than two years ago a unanimous Commission adopted the new Citizens Broadband Radio Service (CBRS), a historic innovation in spectrum policy designed to facilitate intensive sharing of the lightly-used frequency band from 3550 to 3700 MHz. And more than a year ago, again voting 5 – 0, the Commission adopted further rules, resolved petitions for reconsideration, and tasked industry stakeholders with the challenge of forging a consensus on technical standards, developing Spectrum Access Systems capable of coordinating dynamic sharing, and developing a coastal sensing network capable of protecting U.S. Navy operations from harmful interference.

Once again leading the world in forward-thinking spectrum policy, the Commission's three-tier sharing framework for CBRS put the nation on a path toward more open and efficient spectrum sharing. The CBRS framework allows even the smallest rural operators, market entrants and individual venues to access this small cell spectrum to pioneer or implement innovative new services.

The new framework's combination of small area, short-term licensing (Priority Access Licenses) and band-wide opportunistic access, open to anyone (General Authorized Access), has so far stimulated interest, investment activity and innovative use cases that exceed expectations. The 47 companies participating in the Wireless Innovation Forum have spent tens of thousands of hours developing technical standards to implement CBRS, while 55 companies – including chipmakers, mobile carriers, cable companies, equipment manufacturers and more – have joined the CBRS Alliance.<sup>1</sup> Multiple companies have applied for certification as SAS and/or sensing system (ESC) providers.

Many of the investments and innovations already being deployed or tested by small operators and by chip and equipment makers suggest that the non-traditional approach to licensing in this small cell band will promote the public interest by facilitating a wide variety of new users and use cases. For example, Rise Broadband, a recipient of \$16.9 million in FCC Rural Broadband Experiment funding for 10 projects in five states, is already deploying base stations for use at 3650 MHz that will require only a software upgrade to deliver 100 Mbps download speeds to customers once the SAS and ESC systems are authorized and the full 150 megahertz CBRS band is available for use.<sup>2</sup>

Another example, targeting high-traffic areas and the needs of individual venues and businesses, are the “neutral host” in-building access points developed by Ruckus Wireless and Qualcomm.<sup>3</sup> This technology allows individual schools, hospitals, factories, office buildings and other businesses, as well as niche connectivity providers, to deploy and operate their own private LTE networks, integrated with Wi-Fi offload, without the need to make huge upfront payments to the government for exclusive, long-term and large area licenses. The private LTE network and 360-degree virtual reality video experience demonstrated recently by NASCAR at the Las Vegas

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<sup>1</sup> CBRS Alliance membership is available at <https://www.cbbsalliance.org/>.

<sup>2</sup> Ex Parte Letter of WISPA Counsel Stephen Coran, *In the Matter of Amendment of the Commission's rules with Regard to Commercial Operations in the 3550-3700 MHz Band*, GN Docket 12-354 (April 7, 2017).

<sup>3</sup> See Testimony of David A. Wright before the U.S. House Subcommittee on Communications and Technology (April 5, 2017), available at <https://goo.gl/CUyX1G>; “Ruckus Wireless Shares Vision for the Future on In-Building Cellular,” Ruckus Wireless (Feb. 18, 2016), available at <https://goo.gl/2KgMqF>.

Motor Speedway, and streamed live on YouTube, is just a hint of the innovation and consumer benefits that will emerge if this experiment in *non-traditional* licensing and highly localized spectrum access is allowed to proceed.<sup>4</sup>

Consumer advocates and public sector institutions, including signatories to this letter, are convinced that the more open, flexible and localized approach to dynamic spectrum sharing represented by CBRS will be a boon to consumer welfare, rural broadband access, and to schools, libraries and many other venues that can deploy and customize their own private LTE networks. Given this potential – and the investments and innovations already made – it is critical that the Commission move ahead as rapidly as possible to (1) test and certify SAS and ESC providers, so that deployments can begin on a nationwide basis; (2) develop and notice auction rules for the Priority Access Licenses; and (3) finalize any final technical rules needed to allow GAA deployments to begin as soon as the SAS and ESC systems are certified. We urge the Commission to encourage the Department of Defense to finalize requirements for ESC certifications so that deployment of the spectrum sensing system is not unduly delayed.

Our groups are particularly concerned about recent reports of efforts to deter market entry and innovation by pressing the Commission to radically enlarge the size of PAL geographic areas that are auctioned. We believe that auctioning licenses with coverage areas larger than census tracts would undermine the purpose of this small cell innovation band. A traditional licensing scheme based on exclusive access to very large geographic areas for inherently small cell deployments would not allow the largest possible number of businesses, individuals, nonprofit institutions and other entities the ability to self-provision capacity for mobile data offload, for neutral host LTE networks, or to customize highly-localized networks for machine-to-machine, smart city and other connectivity needs. The opportunity loss and spectrum inefficiency inherent in auctioning very large geographic area licenses for a small cell band is particularly true for *indoor use*, where the connectivity needs of a wide variety of enterprise applications may not be well suited to commercial mobile network offerings, a reality the Commission acknowledged in its Spectrum Frontiers *NPRM*.<sup>5</sup>

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<sup>4</sup> The NASCAR trial resulted from a collaboration among CBRS Alliance members Qualcomm, Nokia and Alphabet's Access Group. "Nokia, Alphabet's Access Group and Qualcomm showcase first live demo of a private LTE network over CBRS shared spectrum providing a 360° race car experience," Nokia Press Release (February 7, 2017), available at <https://goo.gl/SwTmE7>.

<sup>5</sup> The Commission has stated it would be "highly efficient" to allocate some spectrum to "enable flexibility to facilitate a third type of network deployment: privately deployed networks that can provide 5G communications for advanced enterprise and industrial applications not suited to unlicensed spectrum or

Very large area and expensive licenses are not a good fit for small cell, high-capacity use cases. Such licenses are also likely to leave the spectrum unused for many years, and perhaps indefinitely, in low-density environments outside of central urban areas, shopping districts and well-trafficked venues. In contrast, the model proven to achieve the highest rates of spectrum re-use – and both fast and affordable connectivity indoors – is the open access *by both operators and end users* to low-power and unlicensed spectrum currently exemplified by Wi-Fi.

We are confident that the PAL auction rules can be fashioned so that wireless ISPs of any size can strategically combine census tracts to fit their business model. Indeed, it is far more feasible for incumbent mobile operators to successfully bid to combine adjacent small license areas than it would be for WISPs and other smaller operators, innovators or market entrants to afford the cost of a license area many times larger than a size that meets their communication need. Indeed, even a census tract – the license area adopted by Commission – can be far larger than necessary in rural and other lower-density areas.

In short, we urge the Commission to focus on an expedited implementation of the rules as adopted in 2015 and 2016. The uncertainty and delay inherent in re-opening the rules for the benefit of one particular group of companies would not serve the broader public interest in our view. The CBRs is designed to promote innovation, competition, rural broadband access and consumer choice. We urge the Commission to reject any effort to backtrack on this unique achievement in forward-thinking spectrum policy.

Sincerely yours,

**Center for Rural Strategies**  
**American Library Association**  
**National Hispanic Media Coalition**  
**R Street Institute**  
**Next Century Cities**  
**Schools, Health & Libraries Broadband (SHLB) Coalition**  
**Open Technology Institute at New America**  
**Public Knowledge**  
**Engine**  
**Common Cause**  
**Institute for Local Self Reliance**  
**Benton Foundation**  
**Gigabit Libraries Network**  
**X-Lab**

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public network services.” *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, GN Docket No. 14-177, Notice of Proposed Rulemaking (rel. October 23, 2015), at ¶ 100.